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THOUGHTS
UPON THE
MEANS OF PRESERVING
THE
HEALTH OF THE POOR,
BY PREVENTION AND SUPPRESSION OF
EPIDEMIC FEVERS.

ADDRESSED TO THE
INHABITANTS
OF THE,
TOWN OF MANCHESTER,
AND OF THE SEVERAL
POPULOUS TRADING TOWNS
SURROUNDING AND CONNECTED WITH IT.

BY THE REV^D. SIR W^M. CLERKE, BART.
RECTOR OF BURY in the County of LANCASTER.

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UNIVERSITY
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MEDICINE

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THOUGHTS,

&c. &c.

THE desire of preserving the health of so numerous and valuable a class of people as the poor, has so full an influence upon the minds of the generality of men, that a favourable indulgence will be readily granted to any one, who, from a motive of diffusing comfort and benefiting his neighbourhood, presumes to offer to the Public observations upon this important subject.

That the occasion of this address proceeds not from a particular local affliction, which has not been before experienced in this populous country, will appear by referring to the inquiries * which the magistrates instituted a few years ago at their Quarter Sessions in Manchester, with

* COUNTY OF LANCASTER.

A representation of a very alarming nature having been made by Lord Grey de Wilton, and a great number of the most respectable inhabitants of the township and neighbourhood of Radcliffe, in this county, to the gentlemen to whom the following letter is directed, of a malignant fever, which was supposed to have originated in the cotton works there; they took the liberty of desiring Dr. Percival, and the other medical gentlemen

with a view to ascertain the cause and state of epidemic fevers in that district, and, by the private exertions of individuals, to suppress this fatal disorder.

With regard to my own opinion, it is probable that I should have remained in the general persuasion of the imprac-

of Manchester, would take upon themselves the trouble of making such inquiries as they should think necessary, in order to ascertain the causes to which it was owing, and the most proper methods to be used to prevent the further spreading of the contagion. Much to the credit of the physicians, they undertook the task with the greatest alacrity, went over to the infected place themselves, and the following report was the consequence :

To

SAMUEL CLOWES, jun.	}	ESQUIRES,
THOMAS B. BAYLEY,		
DORNING RASBOTHAM,		
AND		
M. BENTLEY,		

HIS MAJESTY'S JUSTICES of the PEACE for the County Palatine of
LANCASTER.

GENTLEMEN,

WE have taken into the most deliberate consideration your very humane and judicious requisition ; and we shall now lay before you the result of our inquiries, concerning those interesting objects, which you have proposed to our investigation. We have fully satisfied ourselves, either from actual observation, or authentic testimony, that a low, putrid FEVER, of a contagious nature, has prevailed many months in the cotton mills, and among the poor, in the township of Radcliffe. We cannot, however, ascertain whether this fever originated in those works, or was imported into Radcliffe from some other parts of the county. But though this point remains doubtful, we are decided in our opinion, that the disorder has been supported, diffused, and aggravated, by the ready communication of contagion to numbers crowded together ; by the accession to its virulence from putrid effluvia ; and by the injury done to young persons through confinement and too-long-continued labour : to which several evils the cotton mills have given occasion.

These evils, we trust, are not without remedy ; and from the benevolent attention which the proprietors of the Radcliffe works have shewn to the sick and infirm under their charge, we may reasonably presume to hope they will be induced to adopt the following practicable regulations, from motives

impracticability of introducing effectual regulations among so numerous a class of people, who are, for the most part, improvident and careless of their own healths, had

motives of policy, humanity, and justice, as well as from the respect which is due to your authority :

I. All the casements of the windows, and the three large western doors of the cotton mills, should be left open every night : the same regulation should take place during the recesses from work at noon ; and as many casements should be kept open in the hours of labour as may be compatible with carrying on the operations of the machinery.

II. The casements are too small, being in dimension only about one sixth part of the window : they are likewise placed high, and parallel to each other, a position obviously unfavourable to complete ventilation ; for the inlet of the air ought to be lower than the outlet.

III. Several fire places, with open chimnies, should be erected, at proper distances, in each work room. The stoves now employed afford no sufficient passage for the offensive vapours generated in the rooms, and increase the contamination of the air by the effluvia which they emit. Turf would be the cheapest, and also a very salutary fuel ; for it consists chiefly of the roots of vegetables, and yields, in burning, a strong, penetrating, and pungent smoke, which is likely to prove as good an antidote to contagion as that of wood is found to be from long experience.

IV. The rooms should be daily swept, and the floors washed, at least once every week, with strong lime water, or with water impregnated with the spirit of vitriol or the acid of tar. The walls and cielings may be scraped and whitewashed, at first, every month, and afterwards twice or thrice yearly. Lime, fresh burnt, and as soon as it is slacked, must be used for this purpose, and the wash laid on whilst it is hot.

V. During the prevalence of the present fever the apartments should be fumigated weekly with tobacco. Brimstone might, perhaps, be more powerful ; but, in burning, it yields an acid which would be injurious to the cotton.

VI. Great attention ought to be paid to the privies : they should be washed daily, and ventilated in such a manner that the smell arising from them shall not be perceptible in the work rooms.

VII. The rancid oil which is employed in the machinery is a copious source of putrid effluvia. We apprehend that a purer oil would be much less unwholesome, and that the additional expence of it would be fully compensated by its superior power in diminishing friction.

VIII. A

had not the particular situation of this town and neighbourhood, labouring under the severe affliction of a fever, by exciting a general disposition in the inhabitants both to alleviate, and, if possible, subdue the disorder, occasioned me to prove the impropriety of this conjecture.

By these circumstances, cases of distress and misery
have

VIII. A strict observance of cleanliness should be enjoined on all who work in the mills, as an efficacious means of preventing contagion, and of preserving health. It may also be advisable to bathe the children occasionally. The apparel of those who are infected with the present fever should be well fumigated before it is again worn; and the linen, &c., of the sick should first be washed in *cold* water, lest the steams arising from heat communicate the distemper to the persons engaged in that operation. Croster's lye, when it can be procured, is preferable to water. The bodies of those who die of the fever should be closely wrapped in pitched cloth, and interred as soon as propriety or decency will permit. Smoking tobacco will be an useful preservative to the superintendants of the works, and to others exposed to infection who can practise it with convenience.

IX. We earnestly recommend a longer recess from labour at noon, and a more early dismission from it in the evening, to all those who work in the cotton mills: but we deem this indulgence essential to the present health, and future capacity for labour, of those who are under the age of fourteen; for the active recreations of childhood and youth are necessary to the growth, the vigour, and the right conformation of the human body. And we cannot excuse ourselves, on the present occasion, from suggesting to you, who are the guardians of the public weal, this further very important consideration, that the rising generation should not be debarred from all opportunities of instruction at the only season of life in which they can be properly improved.

We have the honour to be, with the highest respect,
Gentlemen,

Your most faithful and obedient humble Servants,

THOMAS PERCIVAL, M. D.

JOHN COWLING, M. D.

ALEXANDER EASON, M. D.

EDWARD CHORLEY, M. D.

Manchester,
October 8th, 1784.

P. S. Our respectable colleagues, Dr. Mainwaring and Dr. Mitchell, are absent from Manchester at this time.

MAN.

have become publicly known, which otherwise might probably have remained in obscurity.

The knowledge of these distresses, and the promptitude so generally manifested to alleviate them, induced me to consult the opinion of professional men, who, by the course of their practice, were best enabled to give advice upon this subject: from the information I received from them, I was perfectly convinced of the possibility of suppressing, in great measure, the contagion of fever, even in this populous country, without any arduous efforts. In hopes, therefore, that it may excite similar inquiries in other persons, and thereby be productive of a more general attention to the subject, I mean to take the liberty of laying before them the regulations which have been adopted here, in pursuance of the principle of prevention of epidemic disorders; and this I do with the greater satisfaction and confidence, as they, for the most part, originate from the observations of a very eminent physician in Manchester, by whose humane attention, enlarged professional inquiries, and excellent judgement, the Public are daily benefited.

The lower class of inhabitants in this town and neighbourhood have been afflicted with a contagious fever,

MANCHESTER MICHAELMAS SESSIONS, 1784.

THE Magistrates of this county, assembled in their General Quarter Sessions at Manchester, impressed with the obligation they are under, have directed the Clerk of the Peace to give their public thanks to Dr. Percival, Dr. Cowling, Dr. Eason, and Dr. Chorley; and to take care that their letter shall be printed and distributed, so that every part of the community may receive the benefit of their salutary admonitions; a strict attention to which is most earnestly recommended by the Court.

By order of the Court,

JAMES TAYLOR,

Deputy Clerk of the Peace for the County of Lancaster.

which

which has appeared with more or less malignancy for some months past, and has recently swept away great numbers, more especially where it has attacked persons in mature life.

A circumstance * very well worthy of attention, because if it shall appear to be a fact that this disorder has been more fatal to heads of families among the lower class of people, it will be an additional reason, if any stronger than motives of humanity are necessary, why society at large should attend to the progress of disorders that prove particularly fatal to the lives of those persons, in the preservation of whom the Public is more immediately interested.

Nevertheless, had this disorder been confined only to this town, and a small circle round it, the general disposition, which has always prevailed here, of promoting beneficial regulations, would not, I am persuaded, have suffered them to have disregarded the progress of so fatal

* A corresponding proof that the epidemic fever has been most fatal to the heads of families amongst the lower classes of the people, is confirmed by the following table, extracted from Dr. Campbell's Treatise on the Typhus :

Men attacked, 206 — Dead, 25; rather less than 1 in 18.

Women, — 235 — —, 13; — more than 1 in 19.

Children, 225 — —, about 1 in 80, upon the most unfavourable supposition; but perhaps not 1 in 120.

1. The clothing given to the poor belonging either to the township of Bury or Elton, from which townships an aid was granted of 6d. in the pound, is delivered by a ticket from the Treasurer to the Overseer of the Poor, specifying the cost of the articles, and to whom they are to be delivered; and these tickets are the Overseers vouchers to the monthly town's meetings of the expenditure of the money; and the Inspector is the check upon the proper delivery.

2. The subscription, which was very liberally supported, is first applied for the relief of persons not belonging to the above townships, and all expences attending physic and casual support upon the whole.

a misfortune, and might have rendered any more general attention to this subject unnecessary; but I have reason to apprehend that this disorder has been equally destructive of life among the inhabitants of the populous towns of Rochdale; Oldham, Bacup, and their adjacent neighbourhoods:

For which reason, whoever is at all acquainted with the numberless means by which the infection of fever may be conveyed, will immediately see that the partial attention of any particular district to render this disorder less formidable; will, at best, but impart a temporary relief; sufficient, indeed, to enliven their hopes, and stimulate their endeavours, but totally insufficient to prevent a frequent visitation of this fatal disorder:

Unwholesome food, closeness of habitation, want of cleanliness in their persons and houses, the fluctuation of the families of the manufacturers removing from one town to another, the length of time that the infection of fever continues in clothes and furniture, and in houses which are not cleansed by whitewashing, the impossibility at present of proprietors of factories knowing the state of the health of infected families, in consequence of which epidemic fevers are introduced and communicated, without check: These and many other circumstances shew that a partial attention to the infection of fever affords only a temporary relief, and that nothing less than a general conviction of the necessity of attending to this subject will either make the treatment of the prevailing fevers generally known, or render the means of preventing them effectual.

That this undertaking is not of so complicated a nature as to discourage our endeavours, the authority of the opinions I have consulted gives me sufficient assurance;

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but experience, the surest guide, affords a stronger testimony.

By this, as far as the time will allow, it has been proved in this town that the lower class of people are willing to observe the rules laid down for them, as soon as they are convinced that the neglect of them will be attended with danger to themselves and neighbours.

The regulations which were recommended to me, and have been since printed in handbills and distributed through the town for the benefit of families infected by the fever, chiefly consist in precautions of cleanliness, and preclusion of intercourse either by the neighbours with the family infected, or the family infected with them. One person, as inspector, sees into the observance of these rules ; the sick have regularly the benefit of very good medical advice ; and the notoriety of the disorder, and the particular wants of the families, as to bedding, blankets, or linen, are made public.

A proof of the good effects of these regulations and assistances may be deduced from this circumstance :

Before a general plan was adopted for relief in fevers, of sixteen burials in one week at the church the latter end of November last, twelve of them were of persons who died of the fever. This number greatly exceeds the average of burials, as the number in the whole year will not average above two hundred and twenty or thirty, taking it for twenty years ; but perhaps more from the time the town has been increasing so considerably. Since the adoption of the general plan, only four persons have died of the fever in a space of time sufficient for all the persons infected to have gone through every stage of the disorder, as a survey of the families infected was taken on the 21st of December, and general medical attendance immediately given. By that survey it appeared

that at that time sixty-six persons were ill of the fever in this town, or within half a mile of it: that by the 28th of December thirty-one more required attendance; and since that time twenty others have fallen ill: but the numbers recovering daily increase, and the numbers falling ill proportionally lessen; so that there can be no doubt left upon the mind of any one that a great number of lives may be preserved, by proper regulations, from the fatal consequences of epidemic fevers. The number of persons ill of the fever at one time, in respect to the number of inhabitants, was as one to sixty; but I much question whether, upon minute investigation, it would bear so great a proportion. The uncertainty of precise limits, the calculation being formed upon the numbers of those only who receive public relief: These and other considerations render it more a medical inquiry than to the present purpose. But if in a general view of the subject, the years of infancy, the feebleness of old age, the numbers of women in childbed, and in illness consequent upon it, are added to the number ill of the fever, it will seemingly leave but a disproportionate number of persons in health, of an age, and capable of supporting their families. But, in addition to these considerations, regulations for preventing and suppressing epidemic fevers will be attended with other most excellent consequences: they will have a very powerful effect upon the minds of the poor; because, by shewing them how easily the fever may be communicated, and the necessity of cleanliness to prevent it, they cannot fail to convince them of the necessity of an early attention to its appearance, of care and circumspection under it, and the inseparable connection between the habits of cleanliness and the preservation of their health. But suppose there may be instances of obstinate negligence among them; still it is to be

hoped those instances will be fewer the more their situation becomes known: even the whitewashing their houses twice a year*, which may be done at so very trifling an expence as two pence a house, must of itself be a great means of preserving their healths, and introducing habits of cleanliness.

By

* One horse load of lime, which at Manchester costs 1s. 2d., will be sufficient to whitewash about a dozen cottage houses: an expence so beneficial, and yet so trifling, that nothing but the ignorance of this circumstance can possibly occasion so total a neglect of it.

On the subject of whitewashing, I shall transcribe the following note from Mr. Howard's late work on Lazarettos, page 118:

" I have often mentioned the want of lime whitewashing in the prisons, hospitals, and schools in this country, when they appeared to me very dirty, as it is attended with little expence, is exceedingly salutary, and tends to inspire young persons particularly with a love of cleanliness: of this last circumstance I am convinced from experience in somewhat similar instances, as I have repeatedly observed, that when I have pulled down old cottages that had clay floors, and no pantry, no pump, no outhouse for fuel, nor any vault, and have built new ones with the conveniences, which have also been whitewashed both within and without, the very same families, which were before slovenly and dirty, have, upon this change of habitations, become neat in their persons, their houses, and gardens. It was in consequence of these observations, made during my residence on my estate in Bedfordshire, that the clause for whitewashing jails was inserted in the act for preserving the health of prisoners.—In addition to what has been said with regard to cleanliness, it may be observed, that when quick lime is slacked in boiling water, and immediately used, it not only destroys *vermin*, but is found to be one of the strongest antiseptics. In confirmation of this fact, I shall take the liberty of mentioning a remarkable instance of its efficacy in this respect. Dr. John Hope, the first Physician to the Royal Infirmary at Edinburgh, informed me, in one of my visits there, that, two or three years before, a putrid fever had prevailed in that hospital, and that one large ward in particular was so deeply infected as to prove fatal, for some time, to the patients that were lodged in it; but that lime whiting the walls had eradicated the infection, after washing the ward repeatedly with vinegar had failed of this effect, and that this salutary practice had been continued ever since."

The

By keeping a sort of public register of fevers, their source and communication will be better known, and gentlemen who have extensive concerns in factories will have an opportunity of introducing regulations that will co-operate with the general plan of preservation of the health of the neighbourhood.

Objects,

The houses are recommended to be whitewashed twice each year, viz. at the close and commencement of winter; and it is presumed that the Magistrates might very properly inquire into the observance of such a regulation at the time that the Overseer of the Poor applies for their authority to levy any fresh assessment for the relief of the poor.

I insert the rules of prevention, as selected from Dr. Percival's observations, as it may save trouble in case any town where the fever prevails may think it advisable to disseminate copies of it.

RULES OF PREVENTION and SUPPRESSION OF EPIDEMIC FEVERS, for the Use of the Poor of the Townships of BURY and ELTON.

AN early notice of the attack of fever must be given to the medical person appointed to attend the sick.

The apartment of the sick should be washed with soap and hot water, that it may soon become dry.

The sick person should have clean linen both about his person and upon his bed.

If the bed clothes be dirty or offensive, fresh ones should be provided.

Whenever the sick person's linen is renewed, which it should often be, what he puts off should be thrown into cold water, with a portion of soap lye in it, and repeated quantities of cold water poured upon it before it is washed.

The business of washing should be performed in the open air.

When the sick person has occasion to go to stool, the pan which he uses should contain some cold water; and immediately after each stool cold water should again be poured into the pan, which is to be carried out of the chamber with no loss of time.

After the recovery of the sick person, the apartment in which he has been confined should be well aired and whitewashed with lime, fresh slacked, and laid on hot. The windows to be set open every day.

If the bed has been fouled by the discharges of the sick person, it should be burnt.

The bed clothes must be thoroughly soaked in water, then washed and hung in the open air.

Each

Objects, all of them, of so great magnitude in any country, but particularly so in this populous part of the kingdom, that the more any person thinks upon the subject the more will he be struck with the necessity of a serious attention to it.

The excellence of police particularly appears in the ease and safety which society enjoy by regulations which expedite the discovery of theft and robbery.

Each member of the family of the sick should take, according to their age, a tea-spoonful or two of unbruised mustard seed at bed time, to prevent the catching the disorder.

If the family have more apartments than one, that in which the sick person is confined should be frequented only by those who are necessary to attend upon him.

Every member of that family should be precluded from entering into any neighbour's house, and be kept, as much as possible, from all intercourse with others.

The same rule must be observed with respect to the visiting of neighbours or strangers with that family.

To encourage a strict observance of these necessary regulations, a reward will be promised to be paid, at the termination of the fever, by the Committee, to the master or mistress of the house, on producing a certificate from the attending surgeon.

By a strict observance of these rules, we trust, through the blessing of God, that the present misery of the poor will be alleviated, the ravages of a malignant and mortal distemper will be checked, and health, enjoyment, and usefulness to our fellow-creatures, be restored.

Temperance and cleanliness to the whole body of poor are here particularly recommended.

And the Committee, painful as it will be to them, will be obliged to withdraw their support from families who disregard the foregoing resolutions.

These Rules of Prevention and Suppression of Fevers are given to the Public upon the authority of a very eminent Physician at Manchester, by whose humane attention to the poor, superior knowledge, and excellent judgement, the Public are daily benefited.

By order of the Committee,

Bury,

The Rev. Sir W. CLERKE, Chairman.

Dec. 30, 1789.

In

In like manner, if I may use the expression, the detection of the source and progress of epidemic fevers must be preceded by a readiness of inquiry, an easy access of information, and regular attention; for, in a confused mass of fever, how is it possible to give so effectual relief, or ascertain whence it is propagated? Every one is ready to throw off the suspicion from himself, and the means either of prevention or suppression is totally unattainable.

That this object may, in great measure, be accomplished, has been proved by the general observance of the regulations of a most excellent association at Chester to prevent the propagation of the natural small pox, and for the encouragement of inoculation.

And as an experience of years has ascertained the great preservation of life, by the excellence of that institution, we may trust, through the mercy of God, that similar endeavours to prevent the ill effects of other contagious fevers, will be followed with as general advantages.

As soon as a subscription was set on foot in this town, for the relief of the poor afflicted by the fever, I took the liberty of waiting upon Dr. Percival, in Manchester, for his opinion with regard to the most adviseable mode of administering the relief.

I had not the pleasure of finding him at home; but acquainted one of his family with the occasion of my calling. In a few days, without farther solicitation, he was so obliging as to call upon me at Bury. When in conversation upon the subject, he mentioned the great number of lives that there was reason to believe had been saved by the regulations to prevent the spreading of the small pox at Chester, and the little doubt he entertained of the extensive benefit that would be derived to
this

this neighbourhood by similar precautions to prevent the spreading of epidemic fevers, to which the lower class of inhabitants are so particularly subject.

Dr. Percival left with me his observations in writing, which, for the public benefit, and for my own satisfaction, as an apology for presuming to give my thoughts at all upon the subject, I have requested permission to insert.

The following is a transcript of the observations referred to :

To the Revd. Sir W. H. CLERKE, Bart:

RECTOR of BURY.

THE alleviation, suppression, and prevention of epidemic fevers, must depend on the following causes :

I. On early notice of the attack of fever.

II. On attentions to the sick, and to those about them ; and to the proper interment of the dead.

III. On such restrictions on the family and attendants as may prevent the propagation of contagion.

IV. On a regard to the general state of the whole body of the poor.

1. Medical gentlemen should be appointed to search out cases of the epidemic fever, and also to receive immediate information of the first seizure of the disorder ; and they should be authorised to grant stated rewards to those who bring them information, or aid them essentially in their inquiries.

The gentlemen should be commissioned to give daily attendance on the sick, and to direct for them such remedies as their cases may require. An adequate compensation should be made for their professional offices ;
and,

and, to obviate all remissness in attendance, and all temptation to abuse either in the quantity or quality of the medicines administered, a moderate charge should be allowed for each separate visit, and the medicines should be paid for according to the prime cost.

The sick should have the privilege of chusing their medical attendant, provided he be of the number of those appointed to this office. Opinion is the ground of confidence, confidence of hope, and hope is a sovereign cordial under disease. But the liberty of choice should be limited; because the credulity of the poor is too often imposed on by bold and ignorant pretenders.

II. The medical gentlemen appointed should, without delay, exhibit a dose of James's powder, emetic tartar, or such other remedies as circumstances may require, and which experience has shewn to be often successful in suppressing fever.

They should give directions concerning the regimen and clothing of the sick; the ventilation, temperance, and cleanliness of their apartments; the precautions relative to their foul linen; their separation, as far as may be practicable, from the rest of the family; and the total exclusion of all visitors.

If the fever threaten malignancy, they should administer to each of the attendants a dose of rhubarb, and afterwards a decoction of the Peruvian bark.

The chambers of the sick should be washed with soap (which has no bad smell,) and *hot* water, that they may soon become dry; the patients should have clean linen, both about their persons and on their beds; and if the bed clothes be dirty or offensive, fresh ones should be provided. Whenever the linen of the patient is renewed, which it should often be, what they put off should be thrown into *cold* water, with a portion of soap lye, or

of quick lime in it; and it should have repeated effusions of water before it is washed. The operation of washing also should be performed in the open air, by the machine called a *dolly*.

When the patients have occasion to go to stool, the pan which they use should contain some cold water; and the moment the excrements are voided, cold water should again be poured into the pan, which is to be carried out of the chamber with no loss of time.

Adequate supplies of *fresh* air are essential to its *purity*: but the *temperature* of it must also be regarded with a view to *salubrity*: for cold is not only ungrateful to the feelings of the sick, commonly very acute, but in many diseases is injurious by its sedative action; and has often been suspected of giving energy to infection. The ventilation therefore should be accomplished without any current of wind perceptible by the patients, who have no apprehensions of danger from morbid effluvia, but entertain strong prejudices against a flow of cool air, especially when in bed, or asleep. These prejudices, if they are to be deemed such, claim not only tenderness, but indulgence: for though silenced by authority, they will operate secretly and forcibly on the mind, by creating fear, anxiety, and watchfulness. A moderate fire contributes to the purification of a chamber; but in the summer season, when the heat of it would be oppressive, a large lamp or candle should be placed within the chimney to produce a regular stream of air.

Antiseptic odors and fumigations in the apartments of the sick are not recommended, because they have no great efficacy, as generally managed, in correcting febrile contagion; and they always prove injurious to the nervous system of the patients.

In

In every case of mortality, the dead body should be washed with lime water, then wrapped in a pitched cloth, and closed in a coffin. The interment should be in a grave of considerable depth; and a quantity of fresh-slacked lime should be thrown upon the coffin so as to cover it completely: this precaution is intended to guard against the danger of contagion from any future opening of the grave.

After the recovery or death of the patient, the apartment in which he has been confined should be white-washed with lime newly slacked, and laid on hot: the floors also, and wood furniture should be washed with lime water. If the feather bed have been fouled by the discharge of the sick, it should be burnt. Washing and ventilation, with the precautions before directed, are sufficient for the bed clothes, &c.

III. If in the family attacked with fever there be more apartments than one, that in which the patient is confined should be frequented only by those who are necessary to attend upon him: and every member of the family should be precluded from entering into any neighbour's house, and as far as possible from all intercourse with others.

The same rule is to be observed with respect to the communication of neighbours or strangers with the family.

In some cases of peculiar malignancy, when the situation is crowded and close, and the accommodations very inadequate to the necessary restrictions and attendance, the patients should be removed to a house that is better ventilated, and where there is less probability of the communication of contagion. A few empty cottages may be appropriated to such uses; and part of the sick person's family may be permitted to attend upon him,

and to administer those tender charities of domestic life, which afford the highest comfort to the sufferer, and great moral benefit to the performer.

To encourage a strict observance of the proposed regulations, a reward should be paid, at the termination of the fever, to the master or mistress of the house, on producing a certificate from the attending medical practitioner.

iv. In seasons when epidemic fevers prevail, temperance and cleanliness should be strongly recommended to the whole body of the poor. Care should be taken that the markets be supplied with plenty of wholesome animal and vegetable food, and with fuel, at a moderate price. The use of salted and smoke-dried meats should be discouraged; but tea may be allowed as a salutary indulgence. All large factories should be inspected and sedulously purified; and care should be taken, not only of their privies, but that no dunghills, or slaughter houses, be permitted in their neighbourhood. In these workshops a daily allowance of porter, or of ale, in which wormwood has been steeped, might operate as a preservation against contagion; and a tea-spoonful, or two, of unbruised mustard seed, swallowed every night at bedtime, promises to be still more powerful, by its cordial, aperient, and antiseptic qualities.

To the accomplishment of the foregoing plan, a smaller fund will be adequate than might at first view be imagined: but to alleviate misery, to check the ravages of a malignant and mortal distemper, and to restore health, enjoyment, and usefulness to the largest and most valuable class of our fellow citizens, are objects which wisdom and humanity will deem far above all pecuniary appreciation.

T. P.

Manchester, Dec. 23, 1789.

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In pursuance of the plan suggested by Dr. Percival, an Apothecary was appointed for the sick, and an Inspector to attend to the distribution of cordial support, to answer for the proper delivery of bedding, blankets, and linen, to take notice whether the rules were observed or transgressed, and to give such information to the Committee appointed by the subscribers, as the state of the sick families might require. I have annexed at the end, a table, shewing the method of keeping the accounts, and the expence of each article; in order that persons, who it is not probable should be acquainted with the minute detail of separate expences, should see at one view the method of keeping the accounts, and the cost of each article, that can be reduced to a certainty. Some few expences, such as come under cordial support, cannot be so easily ascertained, nor indeed is it necessary; sufficient will appear to enable any one to form a tolerable estimate, as to the extent that any given sum may be beneficial for the above purposes.

In being so minutely particular, I can have no intention to circumscribe any one's views, but to encourage an attention to the subject.

There is no doubt but that thoughtful men, sensible of the ease and safety themselves and family may enjoy, by proper regulations to suppress the spreading of malignant fevers, will countenance with liberality every exertion for the public benefit.

And it will be a farther satisfaction to them, that the regulations which the purest motives of humanity inspire, interest and sound policy co-operate to encourage. Strong imputations have been thrown upon the pernicious system of working cotton factories, as particularly injurious to the healths of persons employed in them, deriving the increase of epidemic fevers from their establishment;

blishment; but for want of a just discrimination, the cause and consequences are confounded.

That the air is rendered injurious to health wherever too many persons are employed in the same room there can be no doubt; and that reformations in this point might be made with great benefit to the community at large: but from thence to conclude that the cause of disorder originates there, is an inference that cannot be justified.

Suppose, for instance, a thousand persons of different ages are employed in branches of the cotton trade upon the same grounds; it may be imagined that these consist of portions of families of which one half may be employed at home, some of whom may be suffering by the fever, and their situation but little known.

How, therefore, is it possible to ascertain either the rise or progress of epidemic fevers in those factories, or, with the greatest circumspection, to take effectual precautions to prevent them, unless a ready information is obtained of the appearance of fever in the portions of families connected with, but not employed upon, the grounds? affording the proprietors, by that information, an opportunity of taking precautions to prevent the influx of the disorder, and thereby preserving the healths of the persons they employ.

The same mode of reasoning will apply equally to any branch of trade where numbers are employed together; or even amongst weavers in the woollen branch, working in their own houses, since I presume it possible that the disorder may be communicated by goods delivered from infected families, and incautiously opened in a warehouse.

Nevertheless, conclusive as these arguments may appear to some persons, others, with very good intention, may

may think that the common impulse of humanity will lead many to acquiesce in the propriety of this measure without examination; but that the impracticability of making regulations in any degree effectual will still continue. In answer to that, had I the presumption to propose a novel system of my own, the reasoning might be conclusive; but where the principle of each regulation is countenanced by the best medical authorities, when the public benefit of them has been proved by a short experience in this town, and by the experience of years under the inspection of Dr. Haygarth, at Chester, that objection may in great measure be done away; and I should think it would very ill become me to labour every argument, as if I was endeavouring to overcome a prejudice, instead of offering hints only, by way of opening an inquiry.

The difficulty will undoubtedly increase in proportion to the numbers that are to be benefited by such regulations: but it is unnecessary to mention how much that difficulty may be lessened by a subdivision of attention. Upon this principle large towns may be divided into small circles, under one general head, and be cleansed, whitewashed, and regulated, without any unusual efforts.

To accomplish purposes which the provision of public charities cannot reach, and the usual mode of parochial relief is incompetent, it certainly deserves to be considered whether a numerous class of people, the most liable to epidemic disorders, improvident and thoughtless to the greatest degree, should be left ignorantly to disseminate, to harbour, and fall a prey to epidemic fevers; or whether it does not become those, the increase of whose property and opulence arises from their industry, to point out wherein they expose themselves to hazard, to assist
 4 them

them in regulations which the afflictions of sickness will make them earnest to look up to, and to give them comforts, which, when bestowed by the contributions of many, are conveyed by a small expence to each contributor, but in the aggregate will conduce to diffuse general good will, to improve the morals, civilize the manners, and strengthen the general interests of society, by a more lasting influence than the warmth of zeal, by the reflections arising from a becoming sense of our duty, and the knowledge of the necessity of mutual dependence.

Again requesting the neighbourhood I have ventured to address to forgive the liberty I have taken,

I have the honour to be,

With the utmost respect and deference,

Their obedient Servant,

H. W. CLERKE.

BURY,
January 12, 1790.

PARTI-

PARTICULARS OF PATIENTS.

Name.	Age.	No. of Family.	Occupation.	Where employed.	Date of Fever.	Date of Death or Recovery.	Settlement.	Rules observed or transgressed.	Casual Remarks.
No. 1. D	40	6	Woollen weaver	Mr. Grundy -	Dec. 28	R. Jan. 4	Bury -	Observed	Great want of bedding and linen.
	12	—	—	—	Jan. 8	R. Jan. 19	—	—	
	7	—	—	—	Jan. 5	D. Jan. 10	—	—	
2. D	35	4	Penciller -	Printing grounds	Dec. 27	R. Jan. 12	Heap -	Observed	Weakened by the fever. Bedflock, shirt, and some cordial support.
	11	—	Prentice -	Ditto -	Jan. 7	R. Jan. 20	—	—	
3.	50	3	Shoemaker -	By J. Batters -	Nov. 10	D. Dec. 9	Gollington	Transgressed	House dirty.
	13	—	Printer -	—	Dec. 1	R. Dec. 8	—	—	

PARTICULARS OF EXPENCES.

		£.	s.	d.
No. 1.		Phyfic - - -	0	0 0
	John Smith - -	Bedstock - - -	0	9 0
		Pair of blankets	0	7 6
	Jane, daughter of	One sheet - - -	0	4 4
		One shift - - -	0	1 7½
			1	2 5½
2		Phyfic - - -	0	0 0
	Mary Dodd, widow	One shift - - -	0	2 4
	James, son of -	One shirt - - -	0	2 0
			0	4 4
3.		Phyfic - - -	0	0 0
	Thomas May -	Two sheets - - -	0	8 8
	John, son of -	Cordial support, port wine, &c.	0	2 0
			0	10 8

Bedstocks

			£.	s.	d.
Bedstocks and cord	————	————	0	9	0
Bed takes 10 yards of linen, at 7d. per yard, 5s. 10d.;					
making 6d. ; straw and filling 8d.	————	————	0	7	0
Pair of blankets, common size	————	————	0	7	6
A larger fort	————	————	0	10	0
1 $\frac{3}{4}$ diaper for coverlid	————	————	0	5	2
One sheet takes 5 yards, at 10d. per yard, 4s. 2d.;					
making 2d.	————	————	0	4	4
One man's shirt takes 3 $\frac{1}{2}$ yards, at 8d. per yard, 2s. 4d.;					
making 5d.	————	————	0	2	9
One woman's shift takes 3 yards, at 3d. per yard, 2s. ;					
making 4d.	————	————	0	2	4
One boy's shirt takes 2 $\frac{1}{2}$ yards, at 8d. per yard, 1s. 8d.;					
making 4d.	————	————	0	2	0
One girl's shift takes 2 yards, at 8d. per yard, 1s. 4d.;					
making 3 $\frac{1}{2}$ d.	————	————	0	1	7 $\frac{1}{2}$
Bolster, 2 $\frac{1}{4}$ yards, at 6 $\frac{1}{2}$ d. per yard, 1s. 2d. ; ma-					
king, &c. 3d.	————	————	0	1	6
			£.	2	3 2 $\frac{1}{2}$

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